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Nuclear LLC

JAN 15 2013

LR-N13-0006

10CFR 50.73

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

LER 311/2012-005
Salem Nuclear Generating Station Unit 1
Facility Operating License No. DPR-75
NRC Docket No. 50-311

SUBJECT: Reactor Trip Due to Failure of a Feedwater Control Valve

The Licensee Event Report, "Reactor Trip Due to Failure of a Feedwater Control Valve," is being submitted pursuant to the requirements of the Code of Federal Regulations, 10CFR 50.73(a)(2)(iv)(A), for Reactor Protection and Auxiliary Feedwater system actuations.

The attached LER contains no commitments. Should you have any questions or comments regarding the submittal, please contact David Lafleur of Salem Regulatory Assurance at 856-339-1754.

Sincerely,

Carl J. Fricker
Site Vice President – Salem

Attachments (1)

IE22
NRR

cc Mr. W. Dean, Administrator – Region 1, NRC
Mr. John Hughey, Licensing Project Manager – Salem, NRC
Ms. E. Bonney, USNRC Senior Resident Inspector, Salem (X24)
Mr. P. McKenna, USNRC Resident Inspector, Salem
Mr. P. Mulligan, Manager IV, NJBNE
Mr. T. Joyce, President and Chief Nuclear Officer – Nuclear
Mr. T. Cachaza, Salem Commitment Tracking Coordinator
Mr. L. Marabella, Corporate Commitment Tracking Coordinator
Mr. D. Lafleur, Salem Regulatory Assurance

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

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4. TITLE
Reactor Trip Due to Failure of a Feedwater Control Valve

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
11	25	2012	2012	0 0 5	0	01	15	13		DOCKET NUMBER

9. OPERATING MODE
1

10. POWER LEVEL
92

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: *(Check all that apply)*

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☒ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
David Lafleur, Senior Compliance Engineer, Salem Regulatory Assurance	(856) 339-1754

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
B	SJ	LCV	F130	Y					

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On November 25, 2012, Salem Unit 2 was in Mode 1 operating at 92% reactor thermal power. At approximately 1128 hours, operators received an Advanced Digital Feedwater Control System (ADFCS) trouble alarm and entered the abnormal operating procedure in response to indications of a lowering level in the 24 Steam Generator (SG){SJ}. The Reactor Operator (RO) took action to recover SG level by taking manual control of the 24 SG Feedwater Control Valve 24BF19 {SJ/LCV}, but was unsuccessful in recovering 24 SG level control. At 1130 hours while operators were proceeding to manually trip the reactor, an automatic reactor trip occurred due to a Lo Lo Level in the 24 SG. The cause of the trip was the failure of the 24BF19 valve due to debris inside the valve positioner current to pneumatic (I/P) converter.

This event is being reported under 10 CFR 50.73(a)(2)(iv)(A), for actuation of the Reactor Protection and Auxiliary Feedwater systems.

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NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

Westinghouse – Pressurized Water Reactor (PWR/4)

System- Feedwater System {SJ}

* Energy Industry Identification System {EIIS} codes and component function identifier codes appear as {SS/CCC}

IDENTIFICATION OF OCCURRENCE

Event Date: November 25, 2012

Discovery Date: November 25, 2012

CONDITIONS PRIOR TO OCCURRENCE

Salem Unit 2 was in Operational Mode 1 operating at 92% reactor thermal power. No additional structures, systems or components were inoperable at the time of the discovery that contributed to the event.

DESCRIPTION OF OCCURRENCE

On November 25, 2012, at approximately 1128 hours, Salem Unit 2 was in Mode 1 operating at 92% reactor thermal power when operators received an ADFCS trouble alarm. Operators observed the 24 SG level decreasing. The 24 SG Feedwater Control Valve, 24BF19 demand was observed to be 71% and rising with actual valve position at approximately 51% open and steady. The RO immediately took manual control of 24BF19 and attempted to open the valve. 24BF19 failed to respond and the 24 SG level continued to decrease. Operators entered their Abnormal Operating Procedure in response to the lowering SG level. Operators are required to initiate a manual trip of the reactor at a SG Narrow Range (NR) level of less than 16% on any one SG. At 1130 hours while the Control Room Supervisor ordered a manual trip of the reactor, SG level decreased to 16% on the 24 SG. Operators were proceeding to manually trip the reactor when an automatic reactor trip occurred due to a 24 SG Lo Lo Level (14% NR) Reactor Trip actuation.

An automatic start of the Auxiliary Feedwater system occurred as expected on unit trip due to low SG water levels. Operators entered Emergency Operating Procedure 2-EOP-TRIP-1, Reactor Trip or Safety Injection and then transitioned to 2-EOP-TRIP-2, Reactor Trip Response. The unit was stabilized in Mode 3, Hot Standby conditions and operators transitioned to normal operating procedures at 1151 hours.

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NARRATIVE

CAUSE OF OCCURRENCE

The cause of this event is attributed to a failure of the 24BF19 valve positioner I/P converter due to debris found inside the air restricting orifice.

PREVIOUS OCCURRENCES

A similar event occurred on Salem Unit 1 on June 15, 2010 which identified a failure of the 12BF19 and 13BF19 SG Feedwater Control Valves to control SG levels during a unit downpower. The root cause for the failures was attributed to sensitivity of the valve positioner I/P converter to air contaminants. Corrective actions to prevent recurrence which included replacing I/P positioners with digital valve controllers had not been implemented at the time of this November 2012 event.

SAFETY CONSEQUENCES AND IMPLICATIONS

There were no safety consequences associated with this event. Operators appropriately responded to the failure of 24BF19 and subsequent automatic reactor trip. Plant response to the reactor trip was as expected and designed. Failure of the 24BF19 valve positioner did not affect and would not have prevented automatic closure in response to a Feedwater Isolation signal.

A review of this event determined that a Safety System Functional Failure (SSFF) as defined in NEI 99-02, Regulatory Assessment Performance Indicator Guidelines, did not occur.

CORRECTIVE ACTIONS

1. The 24BF19 positioner and air regulator were replaced.

2. Control Air lines from inline filters to the valve positioners for all four Unit 2 SG Feedwater Control Valves were blown down to clear debris.

3. A root cause evaluation is in progress to analyze equipment, operations and organizational aspects of this event.

COMMITMENTS

No commitments are made in this LER.